

EXTENDED FEATURES TO CONFERENCING SYSTEM USING A WEB-BASED
MANAGEMENT INTERFACE

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CROSS-REFERENCE TO RELATED APPLICATION(S)

This application claims the benefit of U.S. provisional
10 application 60/393,670, filed July 3, 2002, the content of which
is incorporated herein by reference.

15 FIELD OF THE INVENTION

This invention relates generally to conferencing, and more
particularly, to providing a web-based conferencing system with a
management interface.
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BACKGROUND OF INVENTION

Conference systems enable conferencing and multi-user chat
25 sessions by mixing various audio sources to members. An example
of an existing conferencing system would be Polycom®. These
systems provide rudimentary controls, such as muting, to standard
30 telephones, PBX terminals, and more recently, to dedicated
conferencing units. Unfortunately, the control features on
telephones and the like are limited due to the relative lack of
keys, user interfaces and options; the control features on PBXs
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and the like are limited due to the relative lack of capability
to control multi-user, multi-session conferences and dedicated
5 conferencing units and the like are limited due to the relative
lack of conferencing control since they are only designed to
provide audio mixing capabilities. The advancement of Internet-
10 based conferencing technology provides options for enhanced
control over group communication sessions as well as the
possibility for some new features. Exploitable Internet-based
15 methods include features such as "whispering" (a secondary
session for members to privately talk in parallel with the main
session), "filtering" (where users can selectively block out
another user or group of users), and "bridging" (where a user or
20 computer, acting on behalf of another user or a group of users,
participates in multiple conferences as a proxy agent and/or
audio translator of foreign languages). Consequently, what is
25 needed is an inter-network for providing enhanced conferencing
services (such as, for example, multiple discussions, whispering
and filtering) which includes one or more client networks coupled
30 to a service provider network over a public Internet, where the
service provider network includes control features for
establishing conferencing sessions. Details about telephone services
on the Internet are set forth in Internet Engineering Task Force
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Request for Comment 1789 entitled "INETPhone: Telephone Services and Servers on Internet," April 1995 (hereinafter referred to as RFC 1789),
5 which is incorporated herein by reference; Request for Comment 2543 entitled "SIP: Session Initiation Protocol," March 1999 (hereinafter referred to as RFC 2543), which is incorporated herein by reference;
10 and Request for Comment 2976 entitled "The SIP INFO Method," October 2000 (hereinafter referred to as RFC 2976), which is incorporated herein by reference.

15 SUMMARY OF THE INVENTION

The present invention fulfills the above stated need by providing an inter-network for providing enhanced conferencing services (such as, for example, multiple discussions, whispering and filtering) which includes one or more client networks coupled to a service provider network over a public Internet, where the service provider network includes control features for establishing conferencing sessions. In particular, the present invention provides a conferencing (audio and/or video and/or the like networked conferencing with control features supportive of 25 sub-conferencing) technology that incorporates enhanced control features (multiple discussions, whispering and filtering and the like) in an Internet-based solution by extending the traditional
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concept of "room" to "table" and "avatar" to organize a conferencing session. A "table" is preferably a private session
5 for the purpose of invoking enhanced control features (such as, for example, multiple discussions, and filtering) which preferably involve one or more members as conference
10 participants. "Whispering" is an unsolicited communication from one member as conference participant to one or more other members as conference participants (which is bi-directional once the
15 session is established and can be ended by any whisper participant or the creator). If a member as conference participant wishes to start, for example, a "whispering" session, then the member will preferably need to create a whispering
20 session. If a member as conference participant wishes to start, for example, a "table" session, they will then preferably need to create a table and then invite one or more other members as
25 conference participants to the table for a private discussion (only the creator of the table can end it). Only the invited members as conference participants can see the whispering or table--the other non-invited members as conference participants remain oblivious to or otherwise unreceptive to the whispering or table.
30 An "avatar" is preferably an incarnation of a member as conference participant as they participate in multiple
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conferences. Nevertheless, this incarnation may also be an
5 instance of the member as conference participant, as they toggle
between different conferences, or it may be a software mechanism,
another human agent or a team of agents acting on behalf of the
member as conference participant, such as, for example, paid
10 operators, other users, and/or secretaries that provide services
to monitor, transcribe, or even interact with other members as
conference participants. These enhanced control features are
15 available to the member conference administrator as well as other
members as conference participants. In essence, the present
invention enables members as conference participants to lead
their own mini-discussions or sub-conferences within a conference
20 (i.e., a conference within a conference). In addition, the
present invention is media independent. The controlled targets
can be conventional PBX terminals, VoIP clients, cell phones, and
25 the like. Since the control mechanism is preferably a standard
web-based graphical user interface (GUI) (as modified for
conferencing), a member can use any browser to access their
30 features. The following description, together with accompanying
figures further detail the present invention.

35 BRIEF DESCRIPTION OF THE DRAWINGS

These and other features, aspects and advantages of the present invention will be more fully understood when considered
5 with respect to the following detailed description, appended claims, and accompanying drawings where:

FIG. 1 is a schematic block diagram of one or more members
10 who may join into a conference that provides enhanced conferencing control features in an Internet-based conference solution according to one embodiment of the invention;

15 FIG. 2 is a functional block diagram of one or more members joined as conference participants in a conference that provides enhanced conferencing control features in an Internet-based conference solution according to one embodiment of the invention;
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25 FIG. 3 is a functional block diagram of one or more members joined as conference participants in a conference that provides enhanced conferencing control features in an Internet-based conference solution where one member as conference participant quits out of the conference to be just a member by itself according to one embodiment of the invention;

30 FIG. 4 is a functional block diagram of one or more members joined as conference participants in a conference that provides enhanced conferencing control features in an Internet-based

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conference solution where one member whispers to another member according to one embodiment of the invention;

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FIG. 5 is a functional block diagram of one or more members joined as conference participants in a conference that provides enhanced conferencing control features in an Internet-based conference solution where one or more members invite one or more other members to a table according to one embodiment of the invention;

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FIG. 6 is a functional block diagram of one or more members joined as conference participants in a conference that provides enhanced conferencing control features in an Internet-based conference solution where one or more members have accepted an invite from one or more other members to a table according to one embodiment of the invention;

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FIG. 7 is a functional block diagram of one or more members joined as conference participants in a conference that provides enhanced conferencing control features in an Internet-based conference solution where one or more members as conference participants have created another conference using an Avatar function according to one embodiment of the invention; and

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FIG. 8 is a functional block diagram of the present invention in a system that provides enhanced conferencing control

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features in an Internet-based conference solution, according to one embodiment of the invention.

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DETAILED DESCRIPTION

FIG. 1 is a schematic block diagram of one or more members who may join into a conference that provides enhanced conferencing control features in an Internet-based conference solution according to one embodiment of the invention. The system preferably includes one or more Members 105, 110, 115, 120, 125. The Members 105, 110, 115, 120, 125 may or may not join into a conference to become conference participants. Here, the Members 105, 110, 115, 120, 125 are simply users that are preferably muted and ready to communicate with a conference (but do not have to--which is indicated by the "G" in the circle icons above each member icon). The Members 105, 110, 115, 120, 125 preferably also contain identification (I.D.) information which may include the member name, title, IP address and the like. The I.D. information is setup when a member is created. In order for a member to create itself, a visual basic, visual C and/or the like programming language is used with a standard graphical user interface (GUI) to define and I.D. the member (which is stored in a database). If one of the Members 105, 110, 115, 120, 125 wants

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to initiate a conference, that member will be labeled as the
"administrator" of that self-initiated conference. The
5 administrator is the one that creates, controls, names, adjourns
and has a password for the conference (but the administrator may
delegate functions). For example, if Member 105 wants to
10 initiate a conference and create a conference room, Member 105
would, by using their GUI (which is a standard GUI modified to
allow conferencing functions), click on their circle icon with
15 the "G" in it to open dialog box 130. Dialog box 130 is
available for any member or conference participant; however, the
"Admin" function is only available to the member or conference
participant that is identified as the administrator (unless the
20 administrator has delegated authority to another) and "Bridge" is
only available to a member as conference participant in an avatar
session. Once Member 105 selects "Admin", dialog box 135 will
25 open up where Member 105 will have to select "Room Commence" in
order to create a conference room (such that the Member 105
circle icon would turn red, a circle with an "R" in it,
30 indicating that the member is now a conference participant, and
Member 105 would be labeled as the administrator). Member 105
(as administrator and member conference participant) would now
35 allow other members to join his conference room; however, the

other members would not be allowed to communicate (and would be muted) until the administrator, Member 105, selected each to be a
5 conference participant and selected "Room Commence" again start the discussion. In order for a member to enter Member 105's conference, they would have to select their circle with a "G" in
10 it, open dialog box 130, select "Dial", open dialog box 136, select "Phone", "Location", "IP Address" or the like, open dialog box 137, and select "PBX", "VoIP Gateway" or the like in order to
15 connect to the conference (where "Phone", "Location", "IP Address" and/or the like and "PBX", "VoIP Gateway" and/or the like, identify connection methods which are discussed in FIG. 8). Once this has occurred, all the selected members would be able to
20 communicate as conference participants (changing their circle icons with a "G" in it to a circle with an "R" in it). If a member that entered the conference room was not selected as a
25 conference participant, the member would not hear the conference and would be left alone (and their circle icon with a "G" in it would remain as a circle icon with a "G" in it).

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FIG. 2 is a functional block diagram of one or more members joined as conference participants in a conference that provides
35 enhanced conferencing control features in an Internet-based

conference solution according to one embodiment of the invention.

The system includes a virtual Conference Room A 200 with the one
5 or more Members 105, 110, 115, 120, 125. In this case, all of the
Members 105, 110, 115, 120, 125 have been joined by the
administrator into the conference and are communicating with each
10 other as conference participants (as indicated by the "R" in the
circle icons above each member icon and Conference Room A 200
encircling the Members 105, 110, 115, 120, 125).
15 Notwithstanding, any Member 105, 110, 115, 120, 125 as conference
participant, may click on their circle icon to trigger the dialog
boxes 130, 135, 136 discussed in FIG. 1. The administrator may
also grant certain members as conference participants advanced
20 features which are inaccessible to other members as conference
participants.

25 FIG. 3 is a functional block diagram of one or more members
joined as conference participants in a conference that provides
enhanced conferencing control features in an Internet-based
30 conference solution where one member as conference participant
quits out of the conference to be just a member by itself
according to one embodiment of the invention. The system includes
virtual Conference Room A 200 with the one or more Members 105,
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110, 115, 120, 125 as conference participants. Once the one or
more Members 105, 110, 115, 120, 125 join Conference Room A 200,
5 they can begin communicating with each other once the administrator selects each Member 105, 110, 115, 120, 125 as conference participant and starts the session. If a member as
10 conference participant, here Member 110, quits Conference Room A 200, Member 110 will click on his circle icon with the "R" in it to open dialog box 130 and will select "Quit." Consequently,
15 Member 110 is dropped from the conference, can no longer hear the other Members 105, 115, 120, 125 as conference participants and is essentially left only communicating with himself as a member (as indicated by the "G" in the circle icon above the member 110 icon). The remaining Members 105, 115, 120, 125 as conference participants continue to communicate with each other, unaffected by Member 110 quitting the conference (as indicated by the "R" in
20 the circle icons above and Conference Room A 200 encircling the Members 105, 115, 120, 125 as conference participants). In such configuration, the administrator cannot end or adjourn the conference (as in FIG. 1, using dialog box 135) until the conference room has been vacated, either by the administrator (by revoking the all the member participants privileges to
25 communicate in the conference by clicking on their respective
30 icons above and Conference Room A 200 encircling the Members 105, 115, 120, 125 as conference participants). In such configuration, the administrator cannot end or adjourn the conference (as in FIG. 1, using dialog box 135) until the conference room has been vacated, either by the administrator (by revoking the all the member participants privileges to
35 communicate in the conference by clicking on their respective icons above and Conference Room A 200 encircling the Members 105, 115, 120, 125 as conference participants).

icons and selecting "Quit") or by the all members themselves as conference participants by clicking on their respective icon and
5 selecting "Quit" to leave the conference room empty.

FIG. 4 is a functional block diagram of one or more members
10 joined as conference participants in a conference that provides enhanced conferencing control features in an Internet-based conference solution where one member whispers to another member
15 according to one embodiment of the invention. The system includes virtual Conference Room A 200, dialog box 130 and the one or more Members 105, 110, 115, 120, 125 as conference participants. Here, Member 105 decides to whisper to Member 120. Consequently,
20 Member 105 selects itself, opens up dialog box 130, selects "Whisper" from its menu, and then selects Member 120 in order to invite Member 120 into a whispering session. Now Member 105 and
25 120 can communicate with one another, while still hearing the other Members 110, 115, 125 without the other Members 110, 115, 125 hearing them.

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FIG. 5 is a functional block diagram of one or more members joined as conference participants in a conference that provides
35 enhanced conferencing control features in an Internet-based

conference solution where one or more members invite one or more
5 other members to a table according to one embodiment of the
invention. The system includes virtual Conference Room A 200,
table 510, dialog box 130, dialog box 515 and the one or more
Members 105, 110, 115, 120, 125 as conference participants.
10 Here, Member 105 has decided to invite Member 120 to a table
session (as indicated by the "Y" in the circle icon above the
Member 105 icon as a conference participant while in Conference
15 Room A 200 encircling Members 105, 110, 115, 120, 125).
Consequently, Member 105 selects itself, opens up dialog box 130,
selects "Create Table" from the menu so that Member 105 Table 510
20 appears with a Member 105 circle icon shown on Table 510. From
here, Member 105 selects Member 120 in order to invite Member 120
to Table 510. The "Create Table" operation creates Table 510
25 (which belongs to Member 105) and generates an audio and/or
visual notice to Member 120 (only) to notify Member 120 that
Member 105 has invited them to a table session. With dialog box
515, Member 120 may "Accept", "Deny", "Block", or the like the
30 Member 105 invite to its Table 510. If Member 120 denies or
blocks the invite from Member 105, Member 120 is not joined in a
table session with Member 105 and Member 105 receives notice of
such denial or block in an audio and/or video format. In the case
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where Member 120 blocks the Member 105 invite to the table session, Member 105 is notified of such "Block" and is blocked,
5 until unblocked by Member 120, from sending table invites to Member 120. Member 105 may now close his table or invite another member as a conference participant.

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FIG. 6 is a functional block diagram of one or more members joined as conference participants in a conference that provides
15 enhanced conferencing control features in an Internet-based conference solution where one or more members have accepted an invite from one or more other members to a table according to one embodiment of the invention. The system includes virtual
20 Conference Room A 200, table 510 and one or more invited Members 105, 110, 115, 120, 125 as conference participants. In this case, Member 120 accepted the Member 105 table invite of FIG. 5
25 by using dialog box 515 (as indicated by Member 105 and 120 circle icons in Table 510 and the "Y" in the circle icons above Member 105 and 120 as conference participants while in Conference
30 Room A 200 encircling Members 105, 110, 115, 120, 125). Now Members 105 and 120 can communicate bi-directionally with each other in private Member 105 Table 510. In such case, when Member
35 105 selects Table 510, he will be able to communicate with Member

120 in a private session and when Member 105 selects Conference
Room A 200, he will be able to communicate with Members 110, 115,
5 125 as conference participants and Member 120 if Member 120 is in
Conference Room A 200 (and not on Table 510). Additionally, when
Member 120 selects Table 510, he will be able to communicate with
10 Member 105 in a private session and when Member 120 selects
Conference Room A 200, he will be able to communicate with
Members 110, 115, 125 as conference participants and Member 105
15 if Member 105 is in Conference Room A 200 (and not on Table 510).
Alternatively, when Member 105 selects Table 510, Member 105 will
be able to communicate with Member 120 in a private session and
20 hear Conference Room A 200 where each conference volume can be
adjusted to a preferred listening level and when Member 120
selects Table 510, Member 120 will be able to communicate with
Member 105 in a private session and hear Conference Room A 200
25 where each conference volume can be adjusted to a preferred
listening level.

30 FIG. 7 is a functional block diagram of one or more members
joined as conference participants in a conference that provides
enhanced conferencing control features in an Internet-based
35 conference solution where one or more members as conference

participants have created another conference using an Avatar function according to one embodiment of the invention. The system
5 includes virtual Conference Room B 700, Member 105 Avatar Conference 720, dialog box 130, dialog box 730 and one or more Members 105, 705, 710, 715, as conference participants. Here, the
10 avatar is preferably an incarnation of Member 105 as a conference participant as he participates in multiple conferences: Conference Room B 700 and Member 105 Avatar conference 720 (as
15 indicated by the "Y" in the circle icon above the Member 105 icon while in Conference Room B 700 encircling Members 105, 705, 710,
715 as conference participants). Nevertheless, this incarnation may also be an instance of Member 105, as he toggles between
20 Conference Room B 700 and Member 105 Avatar Conference 720, where it may be a software mechanism, another human agent or a team of agents acting on behalf of Member 105, such as, for example, paid
25 operators, other users, and/or secretaries that provide services to monitor, transcribe, or even interact with the other members as conference participants as per instructions from Member 105.
30 The agent(s), mechanical, human, or otherwise, may be located anywhere so long as they have access the Conference Room B 700 and Member 105 Avatar Conference 720. To establish an avatar session, as illustrated here, Member 105, will select itself to
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open dialog box 130 and will select "Create Avatar" to create Member 105 Avatar Conference 720. Consequently, a Member 105
5 incarnation icon is also shown in Member 105 Avatar Conference 720; however, Member 105 is alone (no other members) and red
10 (already a conference participant) since Member 105 is the administrator of Avatar Conference 720. Member 105 now has the option to perform any of the functions in dialog box 130 (from Member 105 Avatar Conference 720), including "Bridge." Only
15 avatar has the ability to "bridge" conferences by relaying part or all of a conference to another party. Consequently, Member 105 can participate in two separate conferences at the same time and, in regard to Member 105 Avatar Conference 720, perform any
20 of the functions of an administrator as conference participant in a new conference (as described above). Member 105 (and any other members as conference participants in Member 105 Avatar Conference 720) may possess the ability to create tables, start whispering sessions and the like. Additionally, Member 105 can participate in Conference Room B 700 and Member 105 Avatar
25 Conference 720 where all members as conference participants may communicate between the conferences. Member 105 can use the "One Way Bridge" function of dialog box 730 to enable all members of Conference Room B 700 to hear all members of Member 105 Avatar
30 Conference 720 where all members as conference participants may communicate between the conferences. Member 105 can use the "One Way Bridge" function of dialog box 730 to enable all members of Conference Room B 700 to hear all members of Member 105 Avatar
35 Conference 720 where all members as conference participants may communicate between the conferences.

Conference 720 but all members of Member 105 Avatar Conference
720 cannot hear all members of Conference Room B 700 (or vise
5 versa) or use the "Two Way Bridge" function so that all members
of Conference Room B 700 can hear all members of Member 105
Avatar Conference 720. Member 105 can participate in Conference
10 Room B 700 and Member 105 Avatar Conference 720 where one or more
selected members as conference participants may communicate
between the conferences by using the "AmWay Bridge" function in
15 dialog box 730. In such configuration, member 105 can select
"One Way Bridge" or "Two Way Bridge" where volume levels for each
conference can be adjusted. Also, Member 105 may
record/transcribe bridged Conference Room B 700 and/or Member 105
20 Avatar Conference 720. Member 105 Avatar Conference 720 may
translate the used languages in near-real-time and provide audio
and/or video to Member 105 as the creator of the avatar, an
administrator and conference participant.
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FIG. 8 is a functional block diagram of the present
30 invention in a system that provides enhanced conferencing control
features in an Internet-based conference solution, according to
one embodiment of the invention. In a preferred embodiment, the
35 system includes Station 800, Public Branch Exchange (PBX) 830,

Voice Internet Protocol (VoIP) Gateway 832, Conference Server
834, Network Layer 836, Central Server 838, Web Server 826, and
5 Controller 840. According to this embodiment, all elements
located within the client network of Station 800 are preferably
centralized, all elements located within the service provider
10 network of Conference Server 834 are preferably not centralized,
and all elements located in-between: PBX 830, VoIP Gateway 832,
Web Server 826, Controller 840, Network Layer 836 and Central
15 Server 838, are preferably not centralized. Also, Public Branch
Exchange (PBX) 830, Voice Internet Protocol (VoIP) Gateway 832,
Network Layer 836, and Web Server 826 couple 849, 847, 853, 851,
respectively, to other client networks like Station 800 and
20 Public Branch Exchange (PBX) 830, Voice Internet Protocol (VoIP)
Gateway 832 and Central Server 838 couple 855, 857, 859,
respectively, to other service provider networks like Conference
25 Server 834.

The Station 800 preferably includes Controller 802 (which
hosts a standard Graphical User Interface (GUI) 801, standard
30 Command Line Interface (CLI) 803 and the like), a standard
Application Programming Interface (API) 804, Interface 806 (which
hosts Member 808, Avatar Object 810, Table Object 812, Whisper
35 Object 813, Room Object 814, a standard Inter-Process

Communication (IPC) Layer 816, a standard Session Control 818 and
a standard Conference, Management, Billing and Accounting element
5 820), a standard Telephony Application Programming Interface
 (TAPI) 822, a standard Telephony Source Application Programming
 Interface (TSAPI) 824, and a standard Computer Telephone
10 Integration (CTI) Link 828 which houses an API library, software
 drivers and the like that aid it in communicating with third
 party hardware. The PBX 830 preferably includes one or more audio
15 mixers 843; VoIP Gateway 832 preferably includes one or more
 audio mixers 845; and Conference Server 834 preferably includes
 one or more audio mixers 841, each of which are hardware,
20 software and/or firmware that combine multiple input audio
 signals into a single audio output signal and each of which are
 controlled by CTI Link 828. The Member 808, Avatar Object 810,
 Table Object 812, Whisper Object 813, and Room Object 814 may be
25 similar to the member 105, 110, 115, 120, 125; "Create Avatar" of
 dialog box 130; "Create Table" of dialog box 130; "Whisper of
 dialog box 130; and the "Admin" (dialog box 130) function "Room
30 Commence" of dialog box 135, respectively, of the previous
 embodiments.

The Controller 802 and 840 are preferably standard computers
35 for providing control of interface 806 via API 804.

Consequently, once Member 808 has created itself, as described in
5 FIG. 1, by using a visual basic, visual C and/or the like
programming language using a standard graphical user interface
(GUI) to define and I.D. the member (which is stored in a
database), Member 808 will be able to "Dial" (using dialog box
10 130) a "Phone", "Location", "IP Address" or the like (using
dialog box 136) using a PBX like PBX 830, a VoIP Gateway like
VoIP Gateway 832, or the like (as shown in dialog box 137), where
15 both PBX 830 and VoIP Gateway 832 are coupled to a Conference
Server such as Conference Server 834.

To "Dial" a "Phone", "Location", "IP Address" or the like
20 (using dialog box 136 from FIG. 1) over a "PBX" like PBX 830,
Member 808 would first select themselves, open dialog box 130,
select "Dial", open dialog box 136 and select "Phone",
"Location", "IP Address" or the like, open dialog box 137 and
25 select "PBX" to connect to the respective end point conference.
Thereafter, PBX 830 may connect Member 808 to a particular
requested conference via Conference Server 834 using conventional
30 conferencing techniques. As is conventional in teleconferencing,
Member 808 would have to input the particular conference "Phone",
"Location", "IP Address" or the like, a username and a password
35 using GUI 801 and/or CLI 803. Once Member 808 has entered the

appropriate information, as is also conventional with conferencing systems, API 804 provides the coupling to Interface 5 806, Interface 806 provides for the coupling to IPC Layer 816, IPC Layer 816 provides for the coupling to TAPI 822 and TSAPI 824, TAPI 822 and TSAPI 824 signal CTI Link 828 to contact 10 Conference Server 834 via PBX 830 and CTI Link 828 coordinates the call request with PBX 830 and authentication with Conference Server 834. If the conference "Phone", "Location", "IP Address" 15 or the like is correct, and member 808 is authenticated, Member 808 will be joined into the requested conference "Phone", "Location", "IP Address" or the like room and will be able to see other members (if there) but not communicate with them yet. If 20 Member 808 is the administrator, Member 808 will have the administrator privileges as described in the previous figures. If Member 808 is just a member, Member 808 will be joined as a 25 member (in the conference room) but will have to wait for the administrator to select them and commence the conference.

To "Dial" a "Phone", "Location", "IP Address" or the like 30 (using dialog box 136 from FIG. 1) over a "VoIP Gateway" like VoIP Gateway 832, Member 808 would first select themselves, open dialog box 130, select "Dial", open dialog box 136 and select "Phone", "Location", "IP Address" or the like, open dialog box 35

137 and select "VoIP Gateway" to connect to the respective end
5 point conference. Thereafter, VoIP Gateway 832 may connect Member
808 to a particular requested conference via Conference Server
834 using conventional conferencing techniques. As is
conventional in teleconferencing, Member 808 would have to input
10 the particular conference "Phone", "Location", "IP Address" or
the like, a username and a password using GUI 801 and/or CLI 803.
Once Member 808 has entered the appropriate information, as is
15 conventional with conferencing systems, a request to enter the
particular conference is sent to API 804, where API 804 provides
for the coupling to Interface 806, Interface 806 provides for the
coupling to IPC Layer 816, IPC Layer 816 provides for the
20 coupling to Session Control 818, Session Control provides for the
coupling to Conference, Management, Billing and Accounting 820,
Conference, Management, Billing and Accounting 820 provides for
25 the coupling to Network Layer 836, Network Layer 836 provides for
the coupling to Central Server 838 and Central Server 838
provides for the coupling and coordinates the call request and
30 authentication with Conference Server 834. If the conference
"Phone", "Location", "IP Address" or the like is correct, Member
808 is authenticated with an authorization sent back over the
same path that the request came from. Once Interface 806
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receives the authorization, it routes the communication from
Member 808 directly to CTI Link 828 and CTI Link 828 coordinates
5 the conversation with VoIP Gateway 832 and Conference Server 834.

Now Member 808 will be joined into the requested "Phone",
"Location", "IP Address" or the like conference and will be able
10 to see the other members (if there) but not communicate with them
yet. If Member 808 is the administrator, Member 808 will have
the administrator privileges as described in the previous
15 figures. If Member 808 is just a member, Member 808 will be
joined as a member (in the conference room) but will have to wait
for the administrator to select them and commence the conference.

In either of the above cases, whether PBX 830 or VoIP
20 Gateway 832 is used, Member 808 will be able to use all the
functions described in the previous figures, including Whisper
(Whisper Object 813), Create Table (Table Object 812) and Create
25 Avatar (Avatar Object 810). If Member 808 decides to whisper to
another member or create a table or avatar to communicate to one
or more other members while using PBX 830, Member 808 will couple
30 to the another member or one or more other members via CTI Link
828, PBX 830, one or more audio mixers 843 or one or more audio
mixers 841 and coupling 849. If Member 808 decides to whisper to
another member or create a table or avatar to communicate to one
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or more other members while using VoIP Gateway 832, Member 808
will couple to the another member or one or more other members
5 via CTI Link 828, VoIP Gateway 832, one or more audio mixers 845
or one or more audio mixers 841 and coupling 847.

An external user may also enjoy the above communication
10 system by logging into a web server. In this case, Controller
840 enters the system through Web Server 826, Web Server 826
couples Controller 840 to Conference, Management, Billing and
15 Accounting 820 and Conference, Management, Billing and Accounting
820 couples Controller 840 to Controller 802 so that Controller
840 can make use of GUI 801 and/or CLI 803 in establishing or
20 connecting to a conference session.

Although this invention has been described in certain
specific embodiments, those skilled in the art will have no
25 difficulty devising variations which in no way depart from the
scope and spirit of the present invention. It is therefore to be
understood that this invention may be practiced otherwise than is
30 specifically described. Thus, the present embodiments of the
invention should be considered in all respects as illustrative
and not restrictive, the scope of the invention to be indicated

by the appended claims and their equivalents rather than the foregoing description.

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